IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

GREEN MOUNTAIN GLASS, LLC AND CULCHROME, LLC, Plaintiffs, v. SAINT-GOBAIN CONTAINERS, INC. dba VERALLIA NORTH AMERICA, Defendant.	C.A. No. 14-cv-392-GMS JURY TRIAL DEMANDED

JOINT CLAIM CONSTRUCTION CHART

Pursuant to Paragraph 4 of the Court's Scheduling Order, the parties respectfully submit the attached Joint Claim Construction Chart for U.S. Patent Nos. 5,718,737 ("'737") and 6,230,521 ("'521").

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Respectfully submitted,

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U.S. Patent No. 5,718,737 (Mosch)

'737 Patent Claim Terms as to which the Parties Agree

Claim No.	Claim Term	Agreed Construction
1, 9, 18	The order of the steps disclosed in the independent claims	The parties have agreed on the following construction: The steps of claim 1 must be performed in the order written. The steps of claim 9 must be performed in the order written, with one exception: the "adding" steps can be performed interchangeably or simultaneously. The steps of claim 18 must be performed in the order written, with one exception: the "adding" steps can be performed interchangeably or simultaneously.

'737 Patent Claim Terms as to which the Parties Do Not Agree

Claim No.	Claim Term	Plaintiffs' Proposed Construction	Intrinsic Evidence in Support of Plaintiffs' Construction	Defendant's Proposed Construction	Intrinsic Evidence in Support of Defendant's Construction
1, 9, 18	"unsorted mixed color glass cullet"	No construction needed; in the alternative: "broken pieces of glass of mixed colors"	Claims 1, 2, 9, 11, 18, 20. *See, e.g.*, Claim 1 ("obtaining unsorted mixed color glass cullet having glass of at least two different colors . . . creating a recycled glass product of said remaining color from the selectively colorized/decolorized molten mixed color glass cullet.") Evidence from the '737 Specification: 1:12-16 ("The invention	"post-consumer broken pieces of glass of mixed colors that have never been sorted by color"	*Mosch* Patent at Abstract, Claims; Col:line: 1:14-16; 1:27-35; 1:44-67; 2:1-18; 3:40-44; 4:10-23; 5:12-14; 5:17-19. *See e.g.* 2:1-9 "The color distribution of the glass in post-consumer solid municipal waste, and accordingly, in typical mixed color cullet, varies regionally. … The mixed colored material is substantially less valuable

Claim No.	Claim Term	Plaintiffs' Proposed Construction	Intrinsic Evidence in Support of Plaintiffs' Construction	Defendant's Proposed Construction	Intrinsic Evidence in Support of Defendant's Construction
			more particularly relates to methods and compositions whereby mixed colored cullet glass (i.e., broken pieces of mixed colors and types) can be recycled to make useful glass products") 4:12-16 ("The mixed colored cullet is generally reclaimed, post-consumer glass, although the glass producer waste cullet can also be mixed therewith, and typically comprises a mixture of green glass, amber glass and flint (colorless) glass.") 4:66-5:6		than color sorted cullet." Prosecution History, Preliminary Amendment (Sep. 23, 1996) at new claims 19-44; pp. 3, 14, 15, 17, 18. *See e.g.* Prosecution History, Preliminary Amendment (Sep. 23, 1996) at p. 3 (adding paragraph including unsorted), 14-15 " to clarify that the invention relates to a method of creating recycled glass products of a particular color from unsorted mixed color glass cullet, which has heretofore simply been discarded in landfills, used in paving materials, and the like.", at p. 15 "As set, forth by way of example in new independent claim 19, the invention is characterized by adding a previously discarded starting material, namely, unsorted mixed color glass cullet, and producing a recycled glass product, therefrom.", at p. 17 "sorted single color glass cullet has indeed been recycled into new glass products, the unsorted. mixed color glass cullet has not, to Applicant's knowledge, been recycled into new glass products of a

Claim No.	Claim Term	Plaintiffs' Proposed Construction	Intrinsic Evidence in Support of Plaintiffs' Construction	Defendant's Proposed Construction	Intrinsic Evidence in Support of Defendant's Construction
					particular color." at p. 17-18 "nothing in the background of the application suggests that it would have been known to use the unsorted mixed color glass cullet by-product of such conventional techniques to make recycled glass products of a particular color. The Examiner's assertions to the contrary are simply unfounded."
1, 2, 9, 11, 18, 20,	"mixed color cullet"	No construction needed; in the alternative: "broken pieces of glass of mixed colors"	*See* above evidence provided for "unsorted mixed color glass cullet"	*See* Claim Construction provided for "unsorted mixed color glass cullet," *supra*.	(*See* Claim Construction provided for "unsorted mixed color glass cullet," *supra*.) Prosecution History: Preliminary Amendment (Sep. 23, 1996) at p. 18-19, *e.g.* using "unsorted mixed color glass cullet" and "mixed color glass cullet" interchangeably.
1, 9, 18	"at least two different colors"	No construction needed; in the alternative: "more than one color"	Claims 1, 2, 9, 11, 18, 20. *See, e.g.*, Claim 2 ("A method as in claim 1, wherein said obtaining step comprises the step of obtaining mixed color cullet comprising flint, green, and amber colored glass.") Evidence from the '737 Specification:	"[at least] two different colors (not including flint)"	*Mosch* Patent at Abstract; 1:37, 2:4, 2:18-24; 2:55, 3:32, 4:16, 6:16, 6:29, 6:44, 7:12. *See e.g.* Abstract ("green, amber, and flint (colorless) glasses"; 2:4("65% flint (colorless)"

Claim No.	Claim Term	Plaintiffs' Proposed Construction	Intrinsic Evidence in Support of Plaintiffs' Construction	Defendant's Proposed Construction	Intrinsic Evidence in Support of Defendant's Construction
			2:1-5 ("The color distribution of the glass . . . in typical mixed color cullet, varies regionally. A typical color distribution is approximately 65% flint (colorless), 20% amber, and 15% green.") 4:4-6 ("A similar technique may be used to produce recycled green or flint colored bottles and the like.") 4:66-5:6 6:59-62 ("The invention is not limited to the production of amber colored glass from mixed colored cullet. It is also directed to the production of flint or green glass from mixed colored cullet as well.")		

U.S. Patent No. 6,230,521 (Lehman)

STEP NUMBER	STEP LANGUAGE (AS STATED IN CLAIM 1)
1	selecting virgin glass raw materials and determining percentages of selected components of said virgin glass raw materials;
2	determining percentages of at least said selected components of said mixed color glass cullet;
3	determining how much of said mixed color glass cullet is to be melted as a fraction of a recycled finished glass from which said recycled glass products are to be created;
4	specifying the percentage composition of said at least two of said amber, green, and flint glass in said mixed color glass cullet;
5	specifying, prior to melting of said mixed color glass cullet, transmission properties of said recycled glass products of said particular color;
6	calculating using said percentages and said percentage composition the desired glass coloring oxide agent levels and key glass color indicator parameters of glass of said particular color with said specified transmission properties;
7	calculating a composition of said recycled finished glass, said composition including said percentages of said raw materials, said mixed color glass cullet, and amounts of said glass coloring oxide agents suitable to adjust final glass coloring oxide agent levels to said desired glass coloring oxide agent levels for glass of said particular color with said specified transmission properties, whereby when said particular color is green, color contribution of said amber glass is adjusted, when said particular color is amber, color contribution of said green glass is adjusted, and when said particular color is flint, color contribution of said green and amber glass is adjusted; and
8	creating recycled glass products from said calculated composition.

'521 Patent Claim Terms as to which the Parties Agree:

Claim No.	Claim Term	Agreed Construction
1, 26, 28, 30	The order of the steps disclosed in the independent claims	The parties have agreed on the following constructions: For claims 1, 18, and 28: The first five steps of the method disclosed in Claims 1, 28, and 30 must be performed before the last three steps, then the last three steps must be sequentially performed in the order presented in the claim. For claim 26: The four limitations of the independent method disclosed in Claim 26 are properly construed to require that each limitation be sequentially performed in the order presented in the claim.

Claim No.	Claim Term	Agreed Construction
1, 26, 28, 30 4, 6, 8, 10, 11	"key glass color indicator parameters" "key glass indicator parameters"	The parties have agreed on the following construction: "the chemicals, the chemical concentrations, and the redox parameters that affect, in a sensitive way, the color of the glass"

'521 Patent Claim Terms as to which the Parties Do Not Agree

Claim No.	Claim Term	Plaintiffs' Proposed Construction	Intrinsic Evidence in Support of Plaintiffs' Construction	Defendant's Proposed Construction	Intrinsic Evidence in Support of Defendant's Construction
3, 5, 7, 9, 11, 15	"finished glass product"	No construction needed; in the alternative: "a finished product of glass"	Evidence from the '521 Specification: A "finished glass product" is the product that results from the glassmaking method. 4:24-5:5.	"recycled glass product"	Claim language itself including, for example, 3, 5, 17-25. *Lehman* Patent at 4:42-67; 5:13; 5:23; 5:46-50, 5:52-55, 5:45-67; 6:20; 6:55; 12:44; 12:64. *See e.g.* 6:55 ("preferably, the finished glass product is a glass bottle…"); compare claim 17 where the recycled glass product made according to claim 1 is a bottle; "recycled glass product" and "finished glass product" used interchangeably.
1, 26, 28, 30	"recycled glass product"	No construction needed; in the alternative: "a product	1:9-12 ("The invention relates to the field of glass	"finished glass product"	Claim language itself *see e.g.* Claim 1: "A method of

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		made in part from recycled glass"	recycling. The invention more particularly relates to an automated method for recycling mixed colored cullet glass (i.e., broken pieces of glass of mixed colors and types) into new glass products.").		creating recycled glass products…creating recycled glass products" *Lehman* Patent Specification, generally "recycled glass product" and "finished glass product" both refer to products such as bottles. *See e.g.* 6:55.
1, 2, 7, 9, 17 26, 27 28, 30, 31	"mixed color glass cullet" (or "mixed color cullet")	No construction needed; in the alternative: "broken pieces of glass of mixed colors"	Preamble to Claims 1, 26, 28, 30 ("mixed color glass cullet containing at least two of green glass, amber glass, and flint glass") Evidence from the '521 Specification: This definition is given in the background of the invention. 1:10-12; 1:33-40 This definition is also used in the description of the prior art. 1:66-2:1 ("A typical color distribution [in mixed color cullet] is approximately 65% flint (colorless), 20% amber, and 15% green.") *See also* 13:37-59; 8:54-60.	"post-consumer broken pieces of glass of mixed colors that have never been sorted by color"	*Lehman* Patent: 1:11-12; 1:25-32; 1:41-65; 1:66-2:7; 3:38-51; 8:1-12; 8:61-67; 9:1-6. (These references parallel nearly identical portions of *Mosch*.) *See e.g.* 1:66-2:7 "The color distribution of the glass in post-consumer solid municipal waste, and accordingly, in typical mixed color cullet, varies regionally. … The mixed colored material is substantially less valuable than color sorted cullet." *Lehman* Patent Prosecution History, Response to Office Action (June 23, 1999) at 4, 6, 7; Response to Office Action (Sep. 7, 1999) at 14-15. *See e.g. See Lehman* Patent Prosecution History, Response to Office Action (June 23, 1999) at 4 ("The

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					present invention improves upon the technique disclosed by Mosch"); at 6 ("Mosch does not disclose how to make a glass bottle from mixed color cullet in accordance with this process (claim 17), or how to make a glass bottle from mixed color cullet with pre-designated transmission characteristics (claim 18)."); at 7 ("for varying amounts of mixed color cullet over a wide range."); *See e.g.* Response to Office Action at 14-15 (Sep. 7, 1999) ("the color characteristics of the input recycled mixed color cullet varies from batch to batch and may not be controlled in any practical manner"; "As understood by Applicant, "batch compensation" is a technique for handing the variability of cullet color concentrations in cullet recovered from municipal solid waste as described on pages 180 and 181 of the Duckett article. [. . .] This is precisely the problem addressed by Mosch and by the present invention.").
1, 26, 28, 30	[STEP 5] "specifying, prior to	No construction needed; in the alternative: "identifying	Evidence from the '521 Specification:	"specifying, prior to melting of said mixed color glass	*Lehman* Patent Claims 3, 5, and 7.

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	melting of said mixed color glass cullet, transmission properties of said recycled glass products of said particular color;"	the intended transmission properties"	Some "transmission properties" of amber glass are listed in 4:42-50. Of green glass, 4:53-58. Of flint glass, 4:61-5:2. *See also* 12:45-59; 18:5-10.	cullet, transmission properties of said recycled glass products of said particular color **sufficient to define said particular color**;"	*Lehman* Patent 12:39-45; 12:60-65; 13:03-12, discussing transmission properties. Response to Office Action (Sep. 7, 1999) at 13, 18. *See e.g.* Response to Office Action (Sep. 7, 1999) at 13 ("the process of the invention allows the color and transmission characteristics of the final glass product to be designated ***before melting*** (not measured after the glass product is made as taught my Mosch) and for the amounts of colorants and decolorants added to the glass batch to be adjusted in real time (i.e., not based on process feedback after melting)…", Emphasis in original); at 18 ("the claimed method allows one to specify before melting (not measure after the glass product is produced as taught in Mosch) the properties of the resultant batch mixture…the determination of the 55nm and 650 nm transmissions, both in magnitude and ration, in accordance with the

Claim No.	Claim Term	Plaintiffs' Proposed Construction	Intrinsic Evidence in Support of Plaintiffs' Construction	Defendant's Proposed Construction	Intrinsic Evidence in Support of Defendant's Construction
					invention is quite novel…")
1, 26, 28, 30	[STEP 6] "glass coloring oxide agent"	No construction needed; in the alternative: "an agent that affects the color of glass"	Claims 8, 10, 12 Evidence from the '521 Specification: Some common coloring agents for amber glass are listed in 14:29-31. For green, 15:31-32. For flint, 15:48-54. *See also* 8:54-60; 10:54-11:4; 12:32-34; 14:27-33; 15:44-54; 16:44-46; 18:12-14.	"a selected virgin glass raw material included for the sole purpose of providing an oxide that affects the color of the recycled glass products"	*Lehman Patent* at 1:13-22; 3:54-67; 13:60-14:27; 14:33-42; 5:39-41; 15:67-16:12; Figs. 2(a), 2(b), 2(c), 12(a), 12(b), 12(c), 15(a), 15(b), 15(c). *See e.g.* Fig. 12(a) listing "Iron Chromite, $FeCr_2O_4$" as a Raw Material (a "glass coloring oxide agent"), which provides as component parts, Fe_2O_3 (31.5%) and Cr_2O_3 (45.9%) (each a "glass coloring oxide").
1, 26, 28, 30	[STEP 6] "calculating using said percentages and said percentage composition the desired glass coloring oxide agent levels and key glass color indicator parameters of glass of said particular color with said specified transmission properties;"	No construction needed; in the alternative: "using the percentages identified in previous steps to calculate the glass coloring oxide agent levels and key glass color indicator parameters"	Evidence from the '521 Specification: A description of this step, as practiced in one embodiment of the invention, is found at 13:60-14:27.	"calculating **(not based on process feedback after melting),** using said percentages and said percentage composition, the desired glass coloring oxide agent levels and **the desired** key glass color indicator parameters of glass of said particular color with said specified transmission properties;"	*Lehman* Patent Prosecution History, Response to Office Action (Sep. 7, 1999) at 13-14, 18. *See e.g.* Response to Office Action (Sep. 7, 1999) at 13-14 ("the process of the invention allows the color and transmission characteristics of the final glass product to be designated ***before melting*** (not measured after the glass product is made as taught my Mosch) and for the amounts of colorants and decolorants added to the glass batch to be adjusted in real time (i.e., not based on process feedback after melting)".

Claim No.	Claim Term	Plaintiffs' Proposed Construction	Intrinsic Evidence in Support of Plaintiffs' Construction	Defendant's Proposed Construction	Intrinsic Evidence in Support of Defendant's Construction
					See e.g. Response to Office Action (Sep. 7, 1999) at 18 ("the claimed method allows one to specify before melting (not measure after the glass product is produced as taught in Mosch) the properties of the resultant batch mixture…the determination of the 550nm and 650 nm transmissions, both in magnitude and ratio, in accordance with the invention is quite novel…")
1, 26	[STEP 7] "calculating a composition of said recycled finished glass, said composition including said percentages of said raw materials, said mixed color glass cullet, and amounts of said glass coloring oxide agents suitable to adjust final glass coloring oxide agent levels to said desired glass coloring oxide agent levels for glass of said particular color with said specified transmission properties,"	No construction needed; in the alternative: "calculating the amount of each ingredient, expressed as a percentage of the amount of the total batch"	Evidence from the '521 Specification: A description of this step, as practiced in one embodiment of the invention, is found at 16:22-17:27. One example of a "composition of finished glass" is provided at Figure 2(c).	"calculating **(not based on process feedback after melting)** a composition of said recycled finished glass, said composition including said percentages of said raw materials, said mixed color glass cullet, and amounts of said glass coloring oxide agents suitable to adjust**, in real-time,** final glass coloring oxide agent levels to said desired glass coloring oxide agent levels for glass of said particular color with said specified transmission properties,"	*Lehman Patent* Figs. 1, 2(a), 2(b), 2(c), 12(a), 12(b), 12(c), 15(a), 15(b), 15(c). *Lehman* Patent Prosecution History, Office Action (Sep. 7, 1999) at 13, 14, 18; *See e.g.* Response to Office Action (Sep. 7, 1999) at 13-14 ("the process of the invention allows the color and transmission characteristics of the final glass product to be designated ***before melting*** (not measured after the glass product is made as taught my Mosch) and for the amounts of colorants and decolorants added to the glass batch to be adjusted in

Claim No.	Claim Term	Plaintiffs' Proposed Construction	Intrinsic Evidence in Support of Plaintiffs' Construction	Defendant's Proposed Construction	Intrinsic Evidence in Support of Defendant's Construction
					real time (i.e., not based on process feedback after melting)…"(Emphasis in original); both in magnitude and ration, in accordance with the invention is quite novel…")
28	[STEP 7] "calculating a composition of said recycled finished glass including said percentages of said raw materials, said mixed color glass cullet, and amounts of said glass coloring oxide agents suitable to adjust final glass coloring oxide agent levels to said desired glass coloring oxide agent levels for amber glass with said specified transmission properties so as to adjust color contribution of said green glass; and"	No construction needed; in the alternative: "calculating the amount of each ingredient, expressed as a percentage of the amount of the total batch" (*same as above for claims 1, 26*)	Evidence from the '521 Specification: A description of this step, as practiced in one embodiment of the invention, is found at 16:22-17:27. One example of a "composition of finished glass" is provided at Figure 2(c). (*same as above for claims 1, 26*)	calculating **(not based on process feedback after melting)**a composition of said recycled finished glass including said percentages of said raw materials, said mixed color glass cullet, and amounts of said glass coloring oxide agents suitable to adjust**, in real-time,** final glass coloring oxide agent levels to said desired glass coloring oxide agent levels for amber glass with said specified transmission properties so as to adjust color contribution of said green glass;	*See above evidence with respect to [step 7] in claim 1; claim 28 is similar but specific for amber glass.*
30	[STEP 7] "calculating a composition of said recycled finished glass including said percentages of said raw materials, said mixed color glass cullet, and amounts of said glass coloring oxide agents suitable to adjust final glass	No construction needed; in the alternative: "calculating the amount of each ingredient, expressed as a percentage of the amount of the total batch" (*same as above for claims 1, 26*)	Evidence from the '521 Specification: A description of this step, as practiced in one embodiment of the invention, is found at 16:22-17:27. One example of a "composition of finished	Calculating **(not based on process feedback after melting)** a composition of said recycled finished glass including said percentages of said raw materials, said mixed color glass cullet, and amounts of said glass coloring oxide agents suitable to adjust**, in real-**	*See above evidence with respect to [step 7] in claim 1; claim 30 is similar but specific for green glass.*

Claim No.	Claim Term	Plaintiffs' Proposed Construction	Intrinsic Evidence in Support of Plaintiffs' Construction	Defendant's Proposed Construction	Intrinsic Evidence in Support of Defendant's Construction
	coloring oxide agent levels to said desired glass coloring oxide agent levels for green glass with said specified transmission properties so as to adjust color contribution of said amber glass; and"		glass" is provided at Figure 2(c). (*same as above for claims 1, 26*)	**time,** final glass coloring oxide agent levels to said desired glass coloring oxide agent levels for green glass with said specified transmission properties so as to adjust color contribution of said amber glass;	